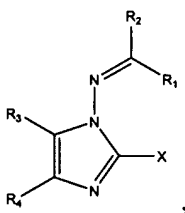


Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A compound of the following formula:



wherein

X is -NR_aR_b or -N=CR_cR_d, in which each of R_a and R_b, independently, is hydrogen, halo, alkyl, haloalkyl, arylalkyl, heteroarylalkyl, arylcarbonyl, heteroarylcarbonyl, arylaminocarbonyl, or arylsulfonyl, in which aryl or heteroaryl is optionally substituted with alkoxy, halo, nitro, cyano, or haloalkyl; and each of R_c and R_d, independently, is hydrogen; halo; alkyl; heteroaryl; phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, alkoxy, or amino; phenylsulfonyl substituted with cyano, halo, oxo, or amino; phenylcarbonyl substituted with cyano, halo, oxo, or amino; naphthylsulfonyl substituted with cyano, halo, oxo, or amino; naphthylcarbonyl substituted with cyano, halo, oxo, or amino; or alkyl optionally substituted with halo, phenyl or imidazolyl, or phenyl or imidazolyl optionally substituted with alkyl, halo, or hydroxy;

R₁ is cycloalkyl, cycloalkenyl, aryl, heteroaryl, or heterocyclyl, optionally fused to aryl, heteroaryl, cycloalkyl, or heterocyclyl; hydrogen; halo; alkyl; haloalkyl; alkenyl; or alkynyl;

R₂ is hydrogen, alkyl, cycloalkyl, cycloalkenyl, phenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, ~~cyano~~, alkyl, haloalkyl, nitro, or alkoxy;

R₃ is hydrogen, alkyl, or phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy; and

R₄ is ~~diphenyl~~, thienyl, pyridinyl, thiazolyl, anthryl, naphthyl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, nitro, or alkoxy; is ~~diphenyl~~, ~~thienyl~~, pyridinyl, thiazolyl, anthryl, ~~naphthyl~~, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy when R₂ is phenyl optionally substituted with hydroxy, alkyl, haloalkyl, or alkoxy; is ~~pyridinyl~~, thiazolyl, anthryl, ~~naphthyl~~, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is phenyl optionally substituted with chloro, bromo, iodo, or nitro; is phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy when R₂ is phenyl substituted with fluoro, alkyl, or haloalkyl; or is ~~alkyl~~, cycloalkyl, cycloalkenyl, or heterocyclyl optionally substituted with hydroxy, halo, alkyl, cyano, nitro, haloalkyl or alkoxy when R₂ is hydrogen, alkyl, cycloalkyl, cycloalkenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, or alkoxy.

2. (Currently Amended) The compound of claim 1, wherein R₂ is thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy; or phenyl optionally substituted with hydroxy, fluoro, chloro, bromo, alkyl, or alkoxy.

3. (Original) The compound of claim 2, wherein R₄ is phenyl, pyridinyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy.

4. (Original) The compound of claim 2, wherein R₂ is phenyl, fluorophenyl, chlorophenyl, trifluoromethylphenyl, methoxyphenyl, chloroanthryl, or chloronitrophenyl.

5. (Original) The compound of claim 3, wherein X is NH₂.

6. (Original) The compound of claim 3, wherein R₁ is hydrogen or heteroaryl; and R₃ is hydrogen or phenyl.

7. (Original) The compound of claim 3, wherein R₂ is phenyl, fluorophenyl, chlorophenyl, trifluoromethylphenyl, methoxyphenyl, chloroanthryl, or chloronitrophenyl.

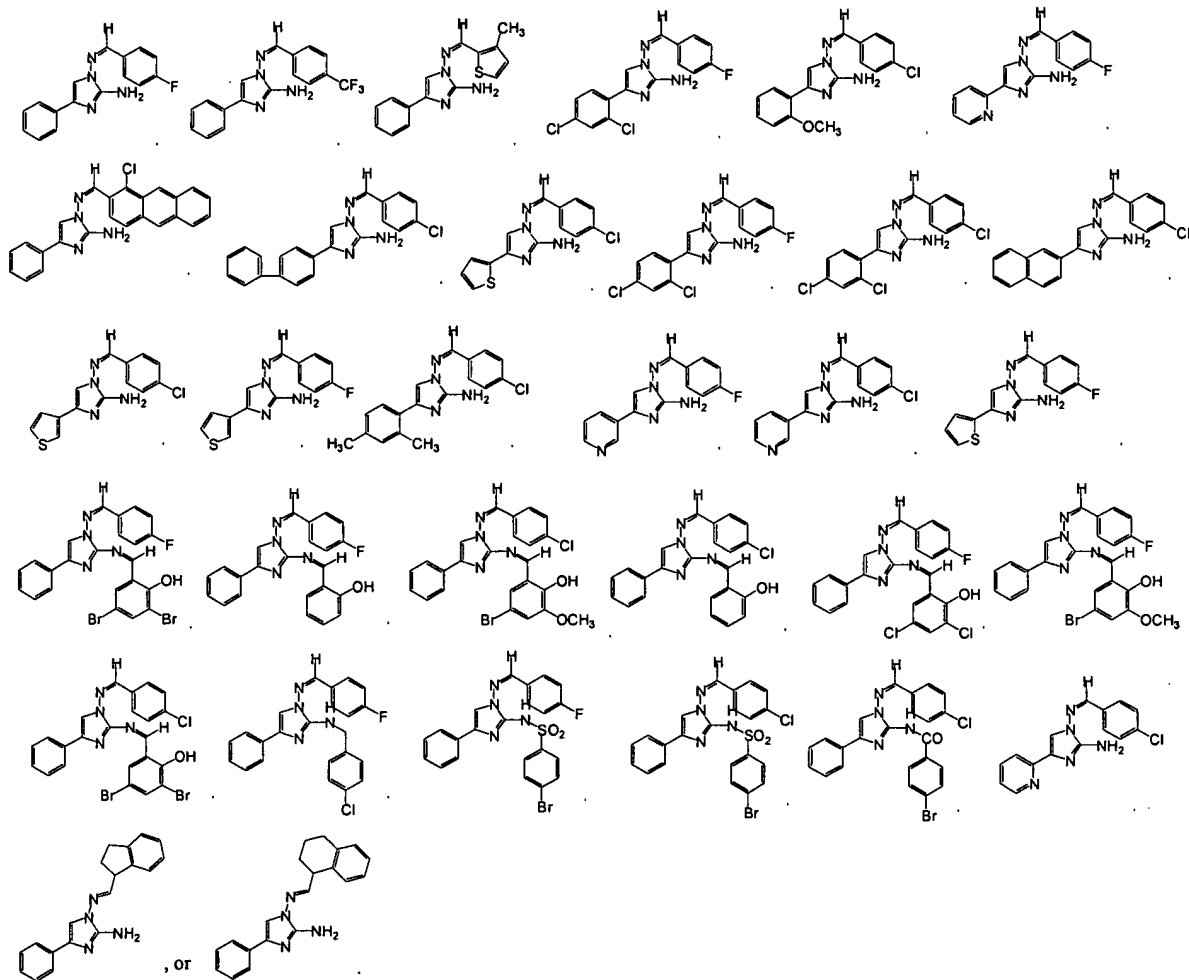
8. (Original) The compound of claim 3, wherein R₄ is phenyl, alkylphenyl, alkoxyphenyl, or chlorophenyl.

9. (Original) The compound of claim 8, wherein R₁ is hydrogen or heteroaryl; R₂ is phenyl, fluorophenyl, chlorophenyl, trifluoromethylphenyl, methoxyphenyl, chloroanthryl, or chloronitrophenyl; R₃ is hydrogen or phenyl; and X is NH₂.

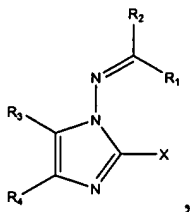
10. (Original) The compound of claim 1, wherein R₄ is phenyl, pyridinyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy.

11. (Original) The compound of claim 10, wherein R₄ is phenyl, alkylphenyl, alkoxyphenyl, or chlorophenyl.

12. (Currently Amended) The A compound of claim 1, wherein the compound is having one of the following formulas:



32. (Currently Amended) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and a compound of the following formula:



wherein

X is $-NR_aR_b$ or $-N=CR_cR_d$, in which each of R_a and R_b , independently, is hydrogen, halo, alkyl, haloalkyl, arylalkyl, heteroarylalkyl, arylcarbonyl, heteroarylcarbonyl, arylaminocarbonyl, or arylsulfonyl, in which aryl or heteroaryl is optionally substituted with alkoxy, halo, nitro, cyano, or haloalkyl; and each of R_c and R_d , independently, is hydrogen; halo; alkyl; heteroaryl; phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, alkoxy, or amino; phenylsulfonyl substituted with cyano, halo, oxo, or amino; phenylcarbonyl substituted with cyano, halo, oxo, or amino; naphthylsulfonyl substituted with cyano, halo, oxo, or amino; naphthylcarbonyl substituted with cyano, halo, oxo, or amino; or alkyl optionally substituted with halo, phenyl or imidazolyl, or phenyl or imidazolyl optionally substituted with alkyl, halo, or hydroxy;

R_1 is cycloalkyl, cycloalkenyl, aryl, heteroaryl, or heterocyclyl, optionally fused to aryl, heteroaryl, cycloalkyl, or heterocyclyl; hydrogen; halo; alkyl; haloalkyl; alkenyl; or alkynyl;

R_2 is hydrogen, alkyl, cycloalkyl, cycloalkenyl, phenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, ~~cyano~~, alkyl, haloalkyl, nitro, or alkoxy;

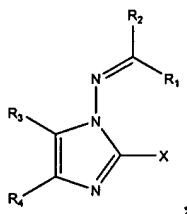
R_3 is hydrogen, alkyl, or phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy; and

R_4 is diphenyl, thienyl, pyridinyl, thiazolyl, anthryl, naphthyl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R_2 is thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, nitro, or alkoxy; is diphenyl, thienyl, pyridinyl, thiazolyl, anthryl, naphthyl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy when R_2 is phenyl optionally substituted with hydroxy, alkyl, haloalkyl, or alkoxy; is pyridinyl, thiazolyl, anthryl,

naphthyl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is phenyl optionally substituted with chloro, bromo, iodo, or nitro; is phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is phenyl substituted with fluoro, alkyl, or haloalkyl; or is alkyl, cycloalkyl, cycloalkenyl, or heterocyclyl optionally substituted with hydroxy, halo, alkyl, cyano, nitro, haloalkyl or alkoxy when R₂ is hydrogen, alkyl, cycloalkyl, cycloalkenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, or alkoxy.

33-36. (Canceled)

37. (Withdrawn) A method for treating cancer, comprising administering to a subject in need thereof an effective amount of a compound of the following formula:



wherein

X is -NR_aR_b or -N=CR_cR_d, in which each of R_a and R_b, independently, is hydrogen, halo, alkyl, haloalkyl, arylalkyl, heteroarylalkyl, arylcarbonyl, heteroarylcarbonyl, arylaminocarbonyl, or arylsulfonyl, in which aryl or heteroaryl is optionally substituted with alkoxy, halo, nitro, cyano, or haloalkyl; and each of R_c and R_d, independently, is hydrogen; halo; alkyl; heteroaryl; phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, alkoxy, or amino; phenylsulfonyl substituted with cyano, halo, oxo, or amino; phenylcarbonyl substituted with cyano, halo, oxo, or amino; naphthylsulfonyl substituted with cyano, halo, oxo, or amino; naphthylcarbonyl substituted with cyano, halo, oxo, or amino; or alkyl optionally substituted with halo, phenyl or imidazolyl, or phenyl or imidazolyl optionally substituted with alkyl, halo, or hydroxy;

R₁ is cycloalkyl, cycloalkenyl, aryl, heteroaryl, or heterocyclyl, optionally fused to aryl, heteroaryl, cycloalkyl, or heterocyclyl; hydrogen; halo; alkyl; haloalkyl; alkenyl; or alkynyl;

R₂ is hydrogen, alkyl, cycloalkyl, cycloalkenyl, phenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, ~~cyano~~, alkyl, haloalkyl, nitro, or alkoxy;

R₃ is hydrogen, alkyl, or phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy; and

R₄ is ~~diphenyl~~, thienyl, pyridinyl, thiazolyl, anthryl, naphthyl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, nitro, or alkoxy; is ~~diphenyl~~, ~~thienyl~~, pyridinyl, thiazolyl, anthryl, ~~naphthyl~~, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy when R₂ is phenyl optionally substituted with hydroxy, alkyl, haloalkyl, or alkoxy; is ~~pyridinyl~~, thiazolyl, anthryl, ~~naphthyl~~, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, nitro, or alkoxy when R₂ is phenyl optionally substituted with chloro, bromo, iodo, or nitro; is phenyl optionally substituted with hydroxy, halo, alkyl, haloalkyl, cyano, nitro, or alkoxy when R₂ is phenyl substituted with fluoro, alkyl, or haloalkyl; or is ~~alkyl~~, cycloalkyl, cycloalkenyl, or heterocyclyl optionally substituted with hydroxy, halo, alkyl, cyano, nitro, haloalkyl or alkoxy when R₂ is hydrogen, alkyl, cycloalkyl, cycloalkenyl, thienyl, thiazolyl, anthryl, or quinolyl, optionally substituted with hydroxy, halo, alkyl, haloalkyl, ~~cyano~~, or alkoxy.

38-41. (Canceled)